ment stores could play an important role in promoting social equity if the revenues are thoughtfully allocated. Since the government would set the price instead of the market, this could prevent the large price declines. Further, this approach would allow the government to keep the revenue instead of having it go to profit-maximizing firms. If a certain percentage of these revenues were allocated to evidence-based programs to build wealth for historically affected individuals, this might help improve economic conditions.

There could be other social equity and public health advantages to the government monopoly approach. In addition to stabilizing prices and revenues, it would be easier to limit the types of products and control marketing in the US with this approach versus the commercial model[6]. Further, liquor stores tend to concentrate in minority communities and there is some evidence suggesting that this is happening with cannabis outlets[9]. Thoughtful siting of state-operated retail stores could avoid this type of predatory concentration.

Of course, it is possible to both give license preferences and set aside tax revenues for programs supporting social equity; they are not mutually exclusive. But given declining prices and the dominance of the for-profit commercial model in US policy discussions, it is unclear whether license preferences will ultimately have the desired effect.

We applaud the public servants who have worked hard to implement social equity programs in places that have legalized cannabis. Our hope is that jurisdictions considering alternatives to cannabis supply prohibition and seeking to improve social equity outcomes – and public health – not limit their discussions to the "for-profit with license preference" model. We encourage these jurisdictions to consider the pros and cons of various legalization options as well as use the growing evidence about the economics of legalization to implement an approach that is most likely to succeed in its social and economic goals.

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The effects of recreational cannabis legalization might depend upon the policy model

Since 2012, when Colorado and Washington State started the path to legalize cannabis for recreational purposes, the trend has been growing. Uruguay became in 2013 the first country to legalize the whole process: from production to distribution, commercialization and consumption. Canada followed suit in 2018. By January 2020, eleven states in the US, Uruguay and Canada have legal access to recreational cannabis for adults, and other countries have started the legalization process or the discussion about it, as is the case of Luxembourg and New Zealand.

Each of these experiences of legalizing cannabis is different from the others[1]. Legalization in the US and Canada has followed a deeply commercial model, while legalization in Uruguay is heavily regulated and controlled by the government[2]. Even in Canada, there are significant differences in the set of rules that each province has opted to follow while legalizing. For example, in some Canadian territories the minimum age for use is 18 years, while in others it is 21.

The features of each legalization policy model might have a different impact on the expected outcomes. Some regulatory policies might increase certain legalization adverse effects, while decreasing other negative impacts. For example, the Uruguayan cannabis legislation forbids the selling of cannabis edibles, which might reduce intoxications among minors but increases the percentage of users that smoke cannabis.

So, it is important to compare the effects of the different models of cannabis legalization and not assume that all the experiences will produce the same results. In other words, it is important to take advantage of the existing variance of policy design. The way in which you regulate might lead to different effects on public health and the other objectives that the policy is designed for[3].

Hall and Lynskey's paper[4] mentions several ways to assess the public health impact of legalizing recreational cannabis use, on the basis of the US experience. The authors provide a very significant contribution to the emerging debate on the importance of reaching an agreement on a group of indicators to be monitored, possibly aggregating them in an index to measure their overall impact on public health[5].

They also recommend that the evaluation looks at outcomes in the short run but also in the long term. For example, they point out that legalization might "enable more adults to use cannabis for a longer period of their lives". It will be necessary to keep track of the impact of this prolonged use on car crash fatalities and injuries, as well as on emergency department attendances related to cannabis consumption. The authors also call the attention to the possibility that cannabis legalization becomes a federal national policy in the US, which will reduce cannabis prices, because cannabis industry will try to enhance profits by increasing the size of the market.

In order to evaluate the impact of the current legalization experiences, it is crucial to measure their effects both on public health and on users' criminalization and contacts with illegal activities. The Uruguayan cannabis regulation model is a middle-ground option between prohibition and commercialization, in which the government imposes strict regulations for users: mandatory registry, maximum amount of cannabis per user (40 g per month and 480 g per year), no advertisement, no selling to tourists, no edibles allowed. These restrictions were planned to control consumption and accomplish the public health goal of the regulation.

The Uruguayan government-oriented model with strict regulations has had a positive impact on controlling substance quality as well as on reducing users' contact with illegal activities. Available data on frequent cannabis users suggest that Uruguayans abandoned *prensado*, a poor quality cannabis sold illegally, and moved to use flowers. Also, they reduced their contacts with illegal dealers and selling points. In that sense, in Uruguay, the regulation made cannabis use safer than before[5]. However, the same restrictions might have kept the black market alive, because many users refuse the registry.

Among the goals that cannabis legalizations pursue, minimizing youth consumption is frequently mentioned (see, for example, the Canadian Cannabis Act[6]). In Uruguay, at this moment, there is no evidence about the impact of legalization on youth consumption produced by research using a control group, but cannabis use among young people had been increasing before 2013, and the trend has apparently remained almost the same after legalization was implemented[7]. Regardless of the evidence, why should we expect a reduction in consumption among adolescents with legalization? It could be argued that, although minors do not have legal access, the increase in cannabis accessibility is likely to lead to more youth consumption.

Hall and Lynskey emphasize the importance of assessing the public health effects of cannabis legalization. I would add that it is essential to evaluate the effects of the different legalization policies on all the outcomes they are designed to accomplish, keeping in mind that each legalization model could improve some outcomes while worsening others.

In order to do that, funding to collect good quality data and conduct research that includes control groups is essential. Coming up with agreements about which indicators should be monitored would be extremely useful, in order to allow collection of comparable data in the different territories where legalization is taking place. By doing that, we will be able to evaluate the impact of different policy designs and contribute to a more evidence-based discussion about the pros and cons of each model.

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Legalizing recreational cannabis use: a promising journey into the unknown

There are many arguments in favor of legalization of recreational use of cannabis. Legalization removes incentives for criminal organizations to be involved, allows for quality control, raises tax revenues, and facilitates researchers to collect and analyze high-quality data.

Hall and Lynskey[1] provide an interesting overview of the public health consequences of legalizing recreational cannabis use. With this legalization, some US states have become frontrunners in international cannabis policy. Research-wise and policy-wise, there are two main issues, i.e. how legalization affects cannabis use and how cannabis use affects health. My reading of Hall and Lynskey's paper is that there are quite a few uncertainties regarding both issues.

From the research viewpoint, any study that aims to investigate determinants and consequences of cannabis use is hampered by the lack of a suitable experimental set-up. It is difficult to imagine research on legalization of cannabis use or cannabis use itself implemented through a randomized controlled trial. As far as I am aware, there is only one such study available[2]. This was conducted over a period of 98 days in Toronto, Canada, and aimed to explore the relationship between cannabis use and workplace behavior.

Participants were recruited from volunteers who had been using cannabis for about two years. During the experiment, participants could earn income by weaving sash belts on portable hand-looms. Workplace behavior was measured as daily production, daily working time and output per hour. Participants were randomly assigned to an experiment group or a control group. Those in the experiment group were required to smoke every day two cigarettes each containing 8 mg of tetrahydrocannabinol (THC). For them, cannabis use was legalized, as they were allowed to purchase a further unlimited number of cannabis cigarettes at a low price. Those in the control group were not required to smoke cannabis cigarettes. These cigarettes were available for them to buy, but had a substantially lower THC content. Two main conclusions could be drawn from the experiment. First, legalization did not result in substantially